CLAIMS

What is claimed is:

1.   A system for fusing multiple degree of freedom (DOF) positional input data, comprising:

software configured to scale positional output data from a first positional input device and a second positional input device, using a common axis therebetween;

said positional output data from said first positional input device having at least two degrees of freedom associated therewith; and

said positional output data from said second positional input device having at least two degrees of freedom associated therewith.

2.   The system of claim 1, wherein:

said common axis defines a first dimension of scaled positional output data from said software;

a non-common axis of said positional output data from said first positional input device defines a second dimension of said scaled positional output data; and

a non-common axis of said positional output data from said second positional input device defines a third dimension of said scaled positional output data.

3.   The system of claim 2, wherein:

said non-common axis of said first positional input device is orthogonal to said non-common axis of said second positional input device; and

said non-common axis of said first positional input device and said non-common axis of said second positional input device are orthogonal to said common axis.

4.   The system of claim 3, further comprising a three dimensional display configured to display said scaled positional output data from said software.

5.   The system of claim 1, wherein said software is embedded in a host environment.

6.   The system of claim 1, wherein said software is embedded within at least one of said first positional input device and said second positional input device.

7.   A system for fusing and displaying multiple degree of freedom (DOF) positional input data, comprising:

a first positional input device;

a second positional input device configured to track the position of said first positional input device;

software in communication with said first and said second positional input device, said software configured to scale positional output data from said first and said second positional input devices using a common axis therebetween; and

a three dimensional display configured to display scaled positional output data from said software.

8.   The system of claim 7, wherein:

said first positional input device has at least two degrees of freedom associated therewith; and

said second positional input device has at least two degrees of freedom associated therewith.

9.   The system of claim 8, wherein:

said common axis defines a first dimension of said scaled positional output data;

a non-common axis of said first positional input device defines a second dimension of said scaled positional output data; and

a non-common axis of said second positional input device defines a third dimension of said scaled positional output data.

10.   The system of claim 9, wherein:

said non-common axis of said first positional input device is orthogonal to said non-common axis of said second positional input device; and

said non-common axis of said first positional input device and said non-common axis of said second positional input device are orthogonal to said common axis.

11.   The system of claim 7, wherein:

said first positional input device further comprises a gyroscopic pointer; and

said second positional input device further comprises a camera configured to track a target attached to said gyroscopic pointer.

12.   The system of claim 11, wherein said gyroscopic pointer further comprises a clutch configured for selectively enabling and disabling transmission of positional data generated therefrom.

13.   The system of claim 11, further comprising a delay element in communication with said camera, said delay element configured to synchronize positional data generated from said gyroscopic pointer with positional data generated from said gyroscopic pointer.

14.   The system of claim 7, wherein said software is configured to prevent scaling of said positional output data from said first and said second positional input devices whenever a minimum threshold of movement along said common axis is not detected.

15.   The system of claim 7, wherein said software is configured to prevent scaling of said positional output data from said first and said second positional input devices whenever a maximum threshold of movement along said common axis is detected.

16.   The system of claim 7, wherein said software is embedded in a host environment.

17.   The system of claim 7, wherein said software is embedded within at least one of said first positional input device and said second positional input device.

18.   A method for fusing and displaying multiple degree of freedom (DOF) positional input data from multiple input sources, the method comprising:
        receiving positional input data from a first positional input device;
        receiving positional input data from a second positional input device;
        scaling said positional input data from said first and said second positional input devices using a common axis therebetween; and
        displaying scaled positional output data on a three dimensional display device.

19.   The method of claim 18, wherein said second positional input device is configured to track the position of said first positional input device.

20.   The method of claim 18, further comprising preventing scaling of said positional output data from said first and said second positional input devices whenever a minimum threshold of movement along said common axis is not exceeded.

21.   The method of claim 20, further comprising preventing scaling of said positional output data from said first and said second positional input devices whenever a maximum threshold of movement along said common axis is exceeded.

22.   The method of claim 21, further comprising preventing scaling of said positional output data from said first and said second positional input devices whenever said receiving positional input data from a first positional input device is interrupted.

23.   A storage medium, comprising:

a machine readable computer program code for fusing and displaying multiple degree of freedom (DOF) positional input data from multiple input sources; and

instructions for causing a computer to implement a method, the method further comprising:

receiving positional input data from a first positional input device;

receiving positional input data from a second positional input device;

scaling said positional input data from said first and said second positional input devices using a common axis therebetween; and

displaying scaled positional output data on a three dimensional display device.

24.   A method for displaying multiple degree of freedom (DOF) positional input data from a multiple DOF input source, the method comprising:

depicting a three dimensional pointing icon on a three dimensional display device, said three dimensional display device having a first three dimensional coordinate system associated therewith;

wherein the positional input data from the multiple DOF input source has a second three dimensional coordinate system associated therewith.

25.   The method of claim 24, wherein said first three dimensional coordinate system is configured to be arbitrarily mapped with respect to said second three dimensional coordinate system.

26.   The method of claim 24, wherein said three dimensional pointing icon further comprises at least one of: a crosshair configuration, an arrow configuration, and a spherical configuration.

27.   The method of claim 26, wherein said three dimensional pointing icon is adjustably sized spherical configuration.

28.   The method of claim 24, further comprising mapping said three dimensional pointing icon to at least one reference grid, said at least one reference grid displayed on said three dimensional display device.

29.   The method of claim 24, further comprising tracking at least one reference structure with said three dimensional pointing icon, said at least one reference structure displayed on said three dimensional display device.

30.   The method of claim 29, wherein said at least one reference structure comprises a reference plane.

31.   The method of claim 29, wherein said at least one reference structure comprises a reference angle bracket.

32.   A system for displaying multiple degree of freedom (DOF) positional input data, comprising:

a multiple DOF input source for generating the positional input data;

a three dimensional display device configured to depict a three dimensional pointing icon on said three dimensional display device;

said three dimensional display device having a first three dimensional coordinate system associated therewith; and

wherein the positional input data from said multiple DOF input source has a second three dimensional coordinate system associated therewith.

33.   The system of claim 32, wherein said first three dimensional coordinate system is configured to be arbitrarily mapped with respect to said second three dimensional coordinate system.

34.   The system of claim 32, wherein said three dimensional pointing icon further comprises at least one of: a crosshair configuration, an arrow configuration, and a spherical configuration.

35.   The system of claim 34, wherein said three dimensional pointing icon is an adjustably sized spherical configuration.

36.   The system of claim 32, wherein said three dimensional pointing icon is mapped to at least one reference grid, said at least one reference grid displayed on said three dimensional display device.

37.   The system of claim 32, wherein at least one reference structure is tracked with said three dimensional pointing icon, said at least one reference structure displayed on said three dimensional display device.

38.   The system of claim 37, wherein said at least one reference structure comprises a reference plane.

39.   The system of claim 37, wherein said at least one reference structure comprises a reference angle bracket.

40.   The system of claim 32, wherein said multiple DOF input further comprises:

a joystick configured to provide positional input data along a first axis and a second axis; and

a lever configured to provide positional input data along a third axis.